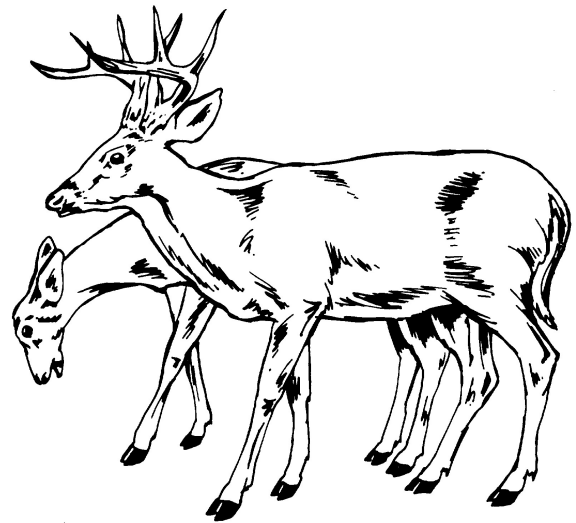


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# Hunters' Attitudes toward Regulatory Changes



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## EXECUTIVE SUMMARY

The harvest of antlerless deer through recreational hunting is wildlife managers' primary tool for regulating deer populations. Deer managers strive to develop regulations that will both: (1) encourage antlerless deer harvest; and (2) maintain or enhance the experience of deer hunters. Knowing how hunters will respond to regulations before they are enacted can enable agencies to develop better regulations. In this study, we explored how New York State deer hunters reacted to proposed regulatory changes.

### Theoretical Background

Regulations can influence: (1) the satisfactions hunters derive; and (2) whether and how they participate in hunting. These and other factors determine whether hunters will support or oppose new regulations. Although some of the factors that influence support have been identified, we are unaware of any comprehensive effort to list the reasons hunters support or oppose regulatory changes and to determine which of these reasons are most important.

We expected hunters' support for regulations to be determined primarily by the outcomes they expect from those regulations. Support for regulations also could be influenced, however, by how these regulations are presented to hunters. Although systematic surveys are useful tools, opinions expressed on them may be unstable and based on poor information. Exploring how including information in mail questionnaires influences responses could allow surveys to be improved as tools for assessing opinions.

To meet these needs, we set the following research objectives:

- measure whether hunters would support or oppose various proposed deer hunting regulations;
- determine whether hunters would participate in the opportunities provided by these regulations;
- identify the reasons hunters support or oppose regulations; and
- assess whether and how information included as part of a mail survey influences hunters' opinions.

### Methods

We collected data through qualitative interviews and a mail survey.

Approximately 65 deer hunters were interviewed either individually or in groups. We selected interviewees to be as diverse as possible with respect to opinions about deer hunting regulations. Through the interviews, we developed a list of the reasons hunters support or oppose proposed regulatory changes.

For the mail survey, we selected a random sample of 5,323 1997 New York State deer hunters. Survey questions were based on the interview results and explored:

- the reasons hunters support or oppose hunting regulations, in general;

- whether they supported or opposed specific proposed regulatory changes; and
- whether they would participate in the opportunities these regulatory changes would create.

New York State Bureau of Wildlife (BOW) biologists identified the specific proposed regulatory changes we presented to hunters. These proposed regulations would:

- continue to allow Sunday hunting in western New York;
- increase the number of days on which Southern Zone bow hunters could use deer management permits (DMPs) during the early archery season;
- allow hunters to transfer or consign unused DMPs to other hunters;
- allow deer of either sex to be taken during the Southern Zone muzzleloader season;
- set opening day of the regular season in relation to Thanksgiving, so that it always occurred either the Monday of the week before Thanksgiving or the Monday of Thanksgiving week;
- legalize crossbows during the regular season, the archery seasons, and/or a new special season;
- allow muzzleloader hunters to use telescopic scopes (optical sights) during muzzleloader season; and
- separate the late archery and muzzleloader seasons (so that they do not overlap) and/or extend the length of these seasons.

To test whether information influenced hunters' opinions, we developed two versions of the questionnaire. One version described the pros and cons of allowing hunters to consign unused DMPs to other hunters, while the other described the pros and cons of setting opening day relative to Thanksgiving. Both versions included the same questions to assess hunters' opinions about the regulations.

We mailed the questionnaires early in January 1999. The response rate was 61.9%. A telephone survey of nonrespondents was conducted beginning in February 1999. Nonrespondents were asked a subset of questions modified from the mail questionnaire. We selected an initial random sample of 298 nonrespondents. We attempted to reach each person a minimum of four times and completed 50 interviews.

Our analyses included four basic components:

- For each regulation, we calculated the percentage of hunters who supported, opposed, or were neutral toward that regulation. Similarly, we calculated the percentage of hunters who would have definitely, probably, possibly, or definitely not taken advantage of the opportunities afforded by the regulations were they available over the last 2 years, whenever this was relevant.
- Using a factor analysis, we sorted the 23 reasons hunters supported or opposed regulations into conceptually similar groups. A single scale was formed from each group by calculating the mean response to all the questions in that group.
- To identify those reasons that influenced support for particular regulations, we conducted multiple linear regression and logistic regression analyses in which the

scales (and remaining individual items) from the factor analyses were used as predictor variables.

- To determine whether receiving information influenced support, we conducted t-tests and chi-square tests comparing the responses of those who received information with those who did not.

## Results and Discussion

Through the factor analysis, we identified 11 basic reasons that hunters support or oppose regulations:

- herd health (interest in protecting the health of the deer herd);
- ethics (concern about hunter behavior, safety, how deer are treated, and protecting landowners);
- crowding (concern for reducing crowding);
- management capability (interest in increasing DEC's management capability);
- individual limits (limiting the number of deer individual hunters can take);
- hunting opportunity (interest in having more opportunities to hunt and take deer);
- participation (interest in increasing hunting participation);
- special opportunities (interest in increasing bow hunting and muzzleloading opportunities); and
- landowners (providing landowner harvest opportunities);
- funding (increasing agency revenue); and
- harvest limits (interest in limiting total harvest).

Hunters' responses to specific regulations were as follows:

- About three-quarters of New York State deer hunters hunted on Sunday in 1997 and in 1998. About three-quarters support continued Sunday hunting in western New York, with very few opposed.
- Over half of all hunters and Southern Zone hunters support earlier DMP use during the archery season with little opposition. Slightly stronger support (nearly 60%) existed among DMP applicants. We found very strong support (nearly 80%) and low opposition among bow hunters.
- Almost half of all hunters probably or definitely would have consigned a DMP to another hunter (or used a DMP consigned by another hunter) during the last two years if they had had the opportunity. More than half support DMP consignment, with slightly higher support among DMP applicants. Nevertheless, more than one-quarter of hunters would oppose this regulatory change.
- About half of all hunters and Southern Zone hunters support legalizing the harvest of any deer during the Southern Zone muzzleloader season. Among muzzleloader hunters, about three-quarters support this regulation. Approximately 1 in 5 oppose this change – 1 in 10 among muzzleloader hunters.

- About half of all deer hunters support keeping the current system for setting opening day. The majority of the rest prefer to have opening day always fall the Monday before Thanksgiving week, but nearly 1 in 5 would like it always to fall the Monday of Thanksgiving week.
- Most hunters (54%) definitely would not have hunted with crossbows had they been legal during the last two years, but 20% probably or definitely would have. Nearly half of all hunters preferred not to legalize crossbows, and nearly half supported one or more forms of legalization. Among those who wanted legalization, allowing use of crossbows during the archery season was most popular and legalizing them during the regular season was least popular. The pattern of support among bow hunters for legalizing crossbows was similar to that among all deer hunters.
- Only about 30% of all deer hunters definitely or probably would have used optical sights on muzzleloaders had they been legal during the past two years. About 40% definitely would not have. Approximately 40% support legalizing optical sights for muzzleloaders, but nearly 30% oppose it. The opposition to optical sights is about the same among muzzleloader hunters as among all hunters, but support is much higher among muzzleloader hunters.
- Hunters had split opinions about the optimal timing and length of the late bow and muzzleloader seasons. A plurality (almost one-third of hunters) wanted to keep the current system, but more than half wanted some type of change. Among those wanting change, a plurality wanted both to separate and extend the late seasons. The smallest percentage wanted only to separate the seasons. Among bow and muzzleloader hunters, stronger support existed for some type of change with separating and extending the seasons still the most popular option.

Although other factors were important, the concerns that most frequently explained support for specific regulations were based in self-interest – increasing personal opportunities to hunt and take deer, particularly among those interested in bow and muzzleloader hunting. Many of the proposed changes were perceived to enhance hunting opportunities and were, therefore, supported by many hunters. The most common reason for opposing regulations was a concern about fairness – some hunters were concerned that providing additional hunting opportunities could also concentrate the harvest in the hands of fewer hunters. Choosing regulations, therefore, appeared to involve balancing creating additional hunting opportunities with distributing harvest equitably.

Hunters who received information about the pros and cons of DMP consignment were slightly but significantly less likely to support this regulation. Respondents who received information about reasons for changing or not changing the timing of opening day gave responses that were significantly and substantially different from those who did not. Hunters receiving information were more likely to favor keeping the current system and less likely to want opening day to fall always on the Monday of the week before Thanksgiving. These differences are striking. Support for keeping the current system increased from 42% to 53%, while support for having opening day fall the week before Thanksgiving dropped from about one-third to less than one-quarter. These findings suggest caution in interpreting mail survey

data about support for regulatory changes when hunters have not been adequately informed about the pros and cons of proposed changes.

## **Recommendations**

Management recommendations based on this study are:

- Two of the proposed regulatory changes – setting opening day relative to Thanksgiving and legalizing crossbows – may be difficult to justify because opponents outnumbered supporters. Hunters supported the other proposed changes, however. Some opposition to these proposals existed, but the existing support may be enough to justify these changes if BOW wants to make them.
- This study showed communication could have a marked effect on opinions. We recommend, therefore, that BOW consider what information hunters need before their opinions are assessed.
- The reasons we identified that influence hunters' attitudes about regulations can serve as the basis of BOW communication. Understanding the importance of these factors to hunters can help BOW tailor their communication to hunters' concerns.
- Hunters' perspectives on the pros and cons of deer hunting regulations could be incomplete or based on misunderstandings. BOW also may choose, therefore, to communicate information about the pros and cons from an agency perspective when evaluating regulatory changes.

We recommend additional research to determine how to communicate with hunters to encourage their opinions about regulations to be:

- thoughtful and based on accurate information; and
- good indicators of likely support or opposition.

We recommend that BOW compare the effects of distributing information to hunters and collecting their opinions:

- as part of a survey, as in this study;
- as part of a broad communication plan targeting all hunters;
- through task forces or focus groups.

Particular outcomes of these approaches that BOW could compare, include:

- how they affect opinions;
- how well they predict future support for or opposition to regulations; and
- how much they cost.

## **ACKNOWLEDGMENTS**

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## **INTRODUCTION**

Deer management has multiple goals. Wildlife managers provide benefits such as hunting, a source of recreation and food, and the opportunity to see and photograph deer. Managers also must protect people from excessive deer-related problems.

Traditionally, hunters have received the most tangible benefits of deer management. Modern management originated to protect and nurture deer populations while providing recreational hunting opportunities. Managers still consider carefully what deer hunters want when making management decisions.

Protecting the public from deer-related damage has become increasingly important over the last few decades, however. White-tailed deer populations are at historic highs and increasing in much of the United States (Warren, 1997). Deer-related problems, including deer-vehicle collisions (Stout et al., 1993), environmental damage (Healy, 1997), property damage (Conover, 1997), and disease (Ostfield et al., 1996) are also increasing.

Controlling deer-related problems depends in part on controlling deer populations, but keeping populations in check can be challenging. Population control requires the harvest of antlerless deer (Ellingwood and Caturano, 1988). As deer populations grow larger, more antlerless deer must be harvested to control them. The number of deer hunters in New York State is decreasing (NYSDEC license data), however, and harvesting enough deer to stabilize or reduce the population is becoming more difficult (Curtis et al., 2000).

Consequently, deer managers strive to develop hunting regulations that will: (1) encourage antlerless deer harvest; and (2) maintain or enhance the experience of deer hunters. For regulations to accomplish these ends, hunters must support them and participate in the opportunities they create. Knowing how hunters will respond to new regulations before they are enacted can enable agencies to develop better regulations. In this study, we explored how deer hunters reacted to proposed regulatory changes in New York State.

## **THEORETICAL BACKGROUND**

### **Support for Regulations**

Deer hunting regulations can increase or decrease the satisfactions that people can derive from hunting (Enck and Decker, 1995). For example, Enck and Decker (1995) found that when regulations enabled hunters to spend more time afield, their hunting satisfactions increased.

Hunting satisfactions in turn influence whether and how people hunt. Enck et al. (1993) reported that duck hunters sometimes gave up hunting if they did not like regulations. Thus, as deer managers strive to enhance their management capability, they must be cautious that regulatory changes they propose do not discourage hunting.

Whether hunters support or oppose regulations is influenced by their satisfactions and participation, but it may be affected by other factors, too. Some of these factors have been identified in past studies. They include:

- whether regulations fairly distribute the opportunity to harvest deer (Hansen et al., 1995);
- how regulations influence the total deer harvest (Enck and Decker, 1995); and
- whether regulations provide enough opportunities to spend time afield and harvest deer (Enck and Decker, 1995).

We are unaware, however, of any effort to identify a comprehensive list of the reasons hunters support or oppose regulatory changes and to determine which of these reasons are most important. Such an effort could help managers to:

- develop regulations that hunters will support; and
- give hunters the type of information they want about proposed regulations.

### **Communication about Regulations**

We expected the reasons hunters support or oppose regulations to relate to the outcomes they expect from those regulations – e.g., whether they would have more or fewer opportunities to hunt, how fairly harvest opportunities would be distributed, etc. Support for regulations also could be influenced, however, by how these regulations are presented to hunters.

Systematic surveys are a useful tool for presenting proposed regulations to hunters. Surveys can reach a large and representative sample of hunters and collect feedback that can be easily quantified. Surveys also have drawbacks for measuring opinions, however. Various authors have argued that:

- opinions expressed on surveys may be unstable (Heberlein, 1976);
- respondents may base their opinions on poor information (Lauber and Knuth, 1998);
- surveys provide only a "snapshot in time" and do not convey how opinions change (Milbraith, 1981);
- collecting opinions through surveys minimizes the opportunity for interaction and deliberation that can refine respondents' perspectives (Milbraith, 1981; Lauber and Knuth, 1998); and
- subtle differences in how alternatives are presented to respondents can influence their opinions (Vining, 1987).

Because of problems like these, Yankelovich (1991) argued that surveys should encourage people to weigh their responses carefully. Several researchers have explored whether distributing information before or as part of a survey could influence responses:

- Reiling et al. (1998) showed that background information about campground fees made campers more supportive of higher fees.
- Lauber and Knuth (2000) demonstrated that fact sheets describing the pros and cons of suburban deer management options influenced opinions about those options.
- McComas and Scherer (1999) included information side bars in a questionnaire about waste management and reported that this information affected responses.
- Bright and Manfredo (1997) showed that balanced two-sided information affected the extremity, but not the direction, of opinions about old growth forest management.

These findings suggest caution when assessing opinions about management options with surveys. Because information can influence opinions, managers must decide what information they want respondents to have before asking their opinions. Ideally, information would encourage reflection about the pros and cons of management alternatives, enabling respondents to offer more considered opinions. Exploring how different types of information influence responses to surveys might allow surveys to be improved as tools for assessing opinions.

To meet these needs, we set the following research objectives:

- measure whether hunters would support or oppose various proposed deer hunting regulations;
- determine whether hunters would participate in the opportunities provided by these regulations;
- identify the reasons hunters support or oppose regulations; and
- assess whether and how information included as part of a mail survey influences hunters' opinions.

## **METHODS**

Our data collection took place in two stages: (1) a series of qualitative interviews; and (2) a mail survey (Appendix A).

### **Qualitative Interviews**

We conducted semi-structured, open-ended interviews to develop a comprehensive list of the reasons hunters support or oppose proposed regulatory changes. Approximately 65 deer hunters were interviewed either individually or in groups. We selected interviewees to be as diverse as possible with respect to opinions about deer hunting regulations. They were identified with the help of New York State Bureau of Wildlife (BOW) deer managers. Interviews took place over the telephone or face-to-face and were tape recorded when possible. Interview questions explored: (1) whether interviewees would support or oppose specific regulations; and (2) the reasons why they would support or oppose these regulations. We analyzed interview data by reviewing the tapes and developing categories that described the reasons hunters supported or opposed regulations.

### **Mail Survey**

#### **Sample Selection**

We selected a random sample of 5,323 1997 New York State deer hunters, including people who bought senior licenses, big game licenses, sportsman licenses, junior archery licenses, and one or more nonresident licenses (combination, big game, bowhunting, and/or muzzleloading).

A random sample of hunters was drawn from each of four geographic strata (Figure 1):

- 1,300 from Metro/Long Island;
- 1,250 from the Catskills;
- 1,250 from the Adirondacks; and
- 1,250 from western New York.

We drew an additional sample of 273 nonresidents to ensure adequate representation of that group. This sample was drawn in proportion to the number of nonresidents in each region:

- 67 from Metro/Long Island;
- 120 from the Catskills;
- 43 from the Adirondacks; and
- 43 from western New York.

## Questionnaire Development

This report relies on data collected through survey questions about:

- the reasons hunters support or oppose hunting regulations, in general;
- whether they supported or opposed specific proposed regulatory changes; and
- whether they would participate in the opportunities these regulatory changes would create.

A list of 23 reasons hunters might support or oppose regulations, in general, was developed during the interview analysis. Mail survey respondents were asked whether each of these 23 reasons was important to them when they considered proposed regulatory changes. They indicated how important each reason was on a 5-point Likert scale (ranging from "strongly disagree" that a reason was important to "strongly agree").

The specific proposed regulatory changes we presented to hunters were identified by BOW biologists. These proposed regulations would:

- continue to allow Sunday hunting in western New York;
- expand the number of days on which Southern Zone bow hunters could use deer management permits<sup>1</sup> (DMPs) during the early archery season;
- allow hunters to transfer or consign unused DMPs to other hunters;
- allow deer of either sex to be taken during the Southern Zone muzzleloader season;
- set opening day of the regular season in relation to Thanksgiving, so that it always occurred either the Monday of the week before Thanksgiving or the Monday of Thanksgiving week<sup>2</sup>;
- legalize crossbows during the regular season, the archery seasons, and/or a new special season;

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<sup>1</sup> DMPs allow hunters to harvest antlerless deer.

<sup>2</sup> Currently opening day falls on Thanksgiving week some years and the week before Thanksgiving other years.

**Figure 1.** Geographic strata used in study.





- allow muzzleloader hunters to use telescopic scopes (optical sights) during muzzleloader season; and
- separate the late archery and muzzleloader seasons (so that they do not overlap) and/or extend the length of these seasons.

Respondents were asked to indicate their support or opposition to these regulations using either a 9-point Likert scale (ranging from "strongly oppose" to "strongly support") or by specifying which of several regulations they would support (when more than one option was available).

For several regulations, hunters indicated whether they would have participated in the opportunities created by the regulations during the last 2 years, if available (using a 4-point Likert scale ranging from "definitely not" to "definitely"). We considered these questions a good index of whether hunters would participate in these opportunities in the future.

To test whether including information in the mail survey influenced hunters' opinions, we developed two versions of the questionnaire. One version described the pros and cons of allowing hunters to consign unused DMPs to other hunters, while the other described the pros and cons of setting opening day relative to Thanksgiving. The pro and con arguments were from the perspective of hunters and were based on statements they made during the qualitative interviews. Both versions included the same questions to assess hunters' opinions about the regulations.

The statements that were included in the questionnaires that had information about DMP consignment were:

- Some people support this change because they believe it would improve DEC's [the New York State Department of Environmental Conservation] ability to manage the size of the deer herd AND/OR because it would provide more hunting opportunities for hunters who did not receive a DMP or who had already filled one.
- Some people oppose this change because they believe it would allow some hunters to take more than their fair share of deer AND/OR they believe it could hurt the public image of hunters for this reason.

The statements that were included in the questionnaires that had information about setting opening day relative to Thanksgiving were:

- Some hunters support setting opening day in relation to Thanksgiving because they believe it would keep harvest rates more similar from year to year.
- Some hunters support having opening day always occur on the Monday of the week before Thanksgiving because they believe fewer hunters would be able to take time off from work to participate. Thus, they believe this change would spread hunting pressure better throughout the season.
- Some hunters support having opening day always occur on the Monday of Thanksgiving week because they believe more hunters would be able to participate in the first week of deer season. The later start would also be less disruptive to the deer's breeding.

- Some hunters support the current system because it provides some variability in opening day from year to year. They believe it has worked well for many years.

## **Survey Implementation**

In implementing the mail survey, we used the 4-wave approach advocated by Dillman (1978) and Brown et al. (1989). We sent out the questionnaires early in January 1999. One-half of the respondents, chosen at random, received the version of the questionnaire with information about DMP consignment. The other half received information about setting opening day relative to Thanksgiving. A reminder letter followed one week later. We mailed a second reminder letter and an additional copy of the questionnaire 10 days later. A final reminder letter was sent to nonrespondents one week after that. The response rate was 61.9%.

A telephone survey of nonrespondents was conducted beginning in February 1999. Nonrespondents were asked a short set of questions modified from the mail questionnaire, focusing on:

- whether they hunted deer in 1997 and 1998;
- the seasons during which they hunted;
- their take of antlered and antlerless deer;
- their use of DMPs;
- their desired deer take; and
- their attitudes toward two of the proposed regulatory changes – (1) DMP consignment; and (2) the legalization of crossbows.

We selected an initial random sample of 298 nonrespondents. We attempted to reach each a minimum of four times and completed 50 interviews.

## **Analysis**

### **Support and Participation**

We assessed support for many of the proposed regulations using a 9-point Likert scale ("strongly oppose" to "strongly support") as described above. Because responses to these questions were not normally distributed but tended to be concentrated at the ends of the scale and at the midpoint, we collapsed responses into 3 categories – oppose (1-3 on the scale), neutral (4-6 on the scale), and support (7-9 on the scale). For each regulation, we calculated the percentage of hunters who supported, opposed, or were neutral toward that regulation. When regulations would have a particularly strong effect on a subset of hunters (e.g., muzzleloader hunters, DMP applicants, etc.), we also calculated the percentage of hunters in these subsets who supported, opposed, or were neutral toward the regulations.

For some regulations, hunters chose one or more acceptable options (rather than indicating their support of only one option). For these regulations, we calculated the percentage of hunters who found each option acceptable.

Similarly, we calculated the percentages of hunters who would have definitely, probably, possibly, or definitely not taken advantage of the opportunities afforded by the regulations were they available over the last 2 years, whenever this was relevant.

### **Reasons for Support**

For each of the 23 reasons for supporting or opposing regulations, we calculated the percentage of hunters who agreed or strongly agreed that the reason was important to them personally.

Because many of the 23 questions were closely related, we used a factor analysis (unweighted least squares methods, Varimax rotation) to sort them into conceptually similar groups. A single scale was formed from each group by calculating the mean response to all the questions in that group. These scales, as well as the individual items that the factor analysis did not justify grouping into scales, provided us with a smaller number of variables describing the reasons hunters support or oppose regulations and were used in subsequent analyses.

To identify those reasons that influenced support for particular regulations, we conducted multiple linear regression and logistic regression analyses in which the scales (and remaining individual items) from the factor analyses were used as predictor variables. Linear regression analyses were used whenever support for a regulation was indicated on a 9-point Likert scale. Logistic regression analyses were used whenever respondents simply checked whether or not they supported the regulation. All possible reasons for supporting or opposing regulations were included as predictor variables in these analyses initially. Nonsignificant predictor variables were deleted one at a time until only significant predictor variables remained.

For the linear regression analyses, we reported semipartial correlation coefficients as measures of the strength and direction of the effect of the predictor variable on support for the regulation. For the logistic regression analyses, we reported whether each significant predictor variable made it more or less likely that someone would support the regulation.

### **Effects of Information**

To determine whether receiving information about DMP consignment influenced support (on a 9-point Likert scale), we conducted a t-test comparing the responses of those who received information with those who did not. To test whether information influenced support for legalizing crossbows, we conducted a chi-squared test (because respondents indicated support for crossbow legalization by checking which of several options they would support).

## **RESULTS AND DISCUSSION**

### **Nonresponse Analyses**

Mail survey respondents indicated whether they supported or opposed 8 hunting regulations. On the nonresponse telephone survey, we had only enough space to assess support for 2 out of these 8 – DMP consignment and legalization of crossbows. Respondents and nonrespondents did not differ significantly in their support for DMP consignment. Nonrespondents were significantly more likely than respondents to support the legalization of

crossbows during the regular season and during a new special season and were less likely to oppose the legalization of crossbows (Table 1). Although the reasons for these differences are unclear, they were considerable and also may have existed undetected for some of the other six regulations we did not have space to ask about on the telephone survey.

### **Reasons for Support**

More than half of New York State deer hunters thought that 15 out of 23 reasons were important in judging deer hunting regulations with some reasons cited as important by 90% (Table 2). Reasons that were important to 80 or more % of hunters were related to:

- concern for deer (both individual deer and deer populations);
- safety;
- the public image of hunters; and
- the interests of landowners.

These reasons were concerned with societal needs rather than to hunters' personal interests in hunting opportunities and taking deer.

Many other considerations that were important to at least half of all hunters focused on personal interests, including:

- increasing hunting opportunities (spending time afield, the opportunity to take bucks, and opportunities for hunters who have trouble taking time off from work);
- reducing crowding; and
- ensuring a fair distribution of harvest opportunities.

Reasons important to more than half of hunters, however, also included community-oriented concerns, such as:

- increasing DEC's management capability; and
- promoting hunting.

Factors that were important to fewer than half of all hunters were:

- increasing special hunting opportunities (opportunities for bow hunters, muzzleloader hunters, and landowners);
- limiting the total deer harvest;
- increasing personal opportunities to take does;
- increasing revenue for DEC; and
- increasing the total number of deer hunters.

The implications of these results for DEC's management capability are mixed. On the one hand, nearly two-thirds of hunters support regulations that would increase DEC's management capability and only about 40% support regulations that would limit the total deer harvest. On the other hand, only 40% of hunters want regulations that would increase their own

**Table 1.** Support for the legalization of crossbows among respondents and nonrespondents.

	Percentage	
	Respondents	Nonrespondents
Legalize during archery seasons	27.6	26.1
Legalize during regular season	9.3	27.7
Legalize during new special season	18.4	42.6
Do not legalize	45.4	31.8
Don't Know	9.0	-

**Table 2.** Importance of various reasons to hunters' support of proposed hunting regulations.

It is important to me that new deer hunting regulations:	Percentage agreeing or strongly agreeing
Promote clean, humane kills	91.4
Make deer hunting a safer sport	89.8
Improve the health of the deer population	88.7
Lead to a better public image of hunters and hunting	87.1
Protect the interests of farmers and other landowners	84.7
Allow me more opportunity to spend time in the field	69.7
Keep a strict limit on the number of deer that individual hunters can take	66.0
Increase DEC's ability to control the size of the deer population	65.9
Reduce crowding of hunters in particular areas	63.4
Increase my own chances of taking large bucks	62.6
Increase hunting opportunities for firearm hunters	61.5
Reduce crowding of hunters on particular days	60.0
Encourage new people to take up deer hunting	58.7
Increase my own chances of taking bucks	58.3
Increase deer hunting opportunities for hunters who have trouble taking time off from work	55.0
Increase opportunities for New York State landowners to harvest deer	49.6
Increase hunting opportunities for bow hunters	47.3
Increase revenue for DEC's deer management programs	45.9
Increase hunting opportunities for muzzleloader hunters	42.7
Do not result in an increased total buck harvest	42.1
Increase my own chances of taking does	39.9
Do not result in an increased total doe harvest	39.6
Increase the total number of deer hunters in New York	36.6

opportunities to take does, something on which DEC's deer management capability ultimately depends.

### **Factor Analysis**

Using a factor analysis, we categorized the 23 reasons into conceptually similar groups. The factor analysis identified 6 factors, which included 18 of the 23 questions. We created scales from these 6 factors by calculating the mean response to all the questions in each scale. These scales and the remaining 5 questions were used in subsequent analyses. We named these scales and questions:

- herd health (interest in protecting the health of the deer herd – Question 22d);
- ethics (concern about hunter behavior, safety, how deer are treated, and protecting landowners – Questions 22q, r, s, and t);
- crowding (concern for reducing crowding – Questions 22u and v);
- management capability (interest in increasing DEC's management capability – Questions 22c);
- individual limits (limiting the number of deer individual hunters can take – Question 22h);
- hunting opportunity (interest in having more opportunities to hunt and take deer – Questions 22g, j, k, l, m, and n);
- participation (interest in increasing hunting participation – Questions 22o and p);
- special opportunities (interest in increasing bow hunting and muzzleloading opportunities – Questions 22e and f); and
- landowners (providing landowner harvest opportunities – Question 22i);
- funding (increasing agency revenue – Question 22w); and
- harvest limits (interest in limiting total harvest – Questions 22a and b).

### **Support and Participation**

In this section we report:

- how many hunters supported each regulation;
- how many hunters would participate in the opportunities the regulations would create (whenever appropriate); and
- what reasons motivated support for or opposition to each regulation.

### **Sunday Hunting**

About three-quarters of New York State deer hunters hunted on Sunday in 1997 and in 1998 (Table 3). About three-quarters also support continued Sunday hunting in western New York, with very few opposed (Table 4).

"Hunting opportunity" was most strongly correlated with support for continued Sunday hunting (Table 5). Hunters were also more likely to support Sunday hunting if they thought that

**Table 3.** Percentage of hunters who hunted on Sundays in 1997 and 1998.

Year	Hunt on Sundays?	
	No	Yes
1997	24.2	75.8
1998	24.7	75.3

**Table 4.** Support for Sunday hunting in western New York.

	Percentage of Hunters
Oppose	7.9
Neutral	16.4
Support	75.7

**Table 5.** Reasons related to support for Sunday hunting<sup>a</sup>.

Independent Variable	Semipartial Correlation
Hunting opportunity	0.173
Participation	0.087
Herd health	0.069
Individual limits	-0.064
Landowners	-0.052
Crowding	-0.051

<sup>a</sup> Absolute value of semipartial correlation reflects strength of association. Sign indicates whether association with support is positive or negative.



"participation" and "herd health" were important. Hunters were more likely to oppose Sunday hunting if they were concerned about "individual limits," "landowners," and "crowding."

Sunday hunting is noncontroversial with strong support and little opposition. The close relationship between support and interest in "hunting opportunity" suggests that the primary advantage hunters see in this regulation is providing more hunting opportunities for current and prospective hunters. The significance of "participation" may indicate that hunters believe additional hunting opportunities would increase the likelihood of recruiting and retaining hunters.

The correlation of "individual limits" with opposition to Sunday hunting may reflect a concern that giving hunters more time in the field would allow those who are most skilled to take a disproportionate share of the harvest.

### **Earlier DMP Use in the Archery Season**

More than half of all hunters and Southern Zone hunters support earlier DMP use during the archery season with little opposition (Table 6). Slightly stronger support (nearly 60%) existed among DMP applicants. We found very strong support (nearly 80%) and low opposition among bow hunters.

"Special opportunities" was the variable most closely correlated with support for earlier DMP use (Table 7). Weaker negative relationships existed between support and "individual limits" and "harvest limits." Hunters were less likely to support this regulation if they shared these concerns. Respondents interested in "funding" were slightly more likely to support earlier DMP uses.

The majority of hunters supported this proposal, with the greatest support coming from bow hunters who would benefit directly if the regulation were enacted. The strong relationship between support and "special opportunities" shows that the principal advantage to this regulation, from the perspective of hunters, would be additional special hunting opportunities. The negative correlation between support and "individual limits" and "harvest limits" suggests that some hunters are concerned that earlier DMP use could allow bow hunters to take a greater share of the deer harvest and could increase the total deer harvest.

### **DMP Consignment**

Almost half of all hunters probably or definitely would have consigned a DMP to another hunter (or used a DMP consigned by another hunter) during the last two years if they had had the opportunity (Table 8). Nearly three-quarters might have taken advantage of this opportunity.

More than half support DMP consignment (Table 9), with slightly higher support among DMP applicants. Nevertheless, more than one-quarter of hunters would oppose this regulatory change. Support has increased substantially in recent years. In a study of 1993 deer hunters, Enck and Decker (1995) reported that support and opposition to DMP consignment was evenly split with about 41% of hunters in each group. Currently, supporters outnumber opponents by about 2 to 1.

**Table 6.** Support for earlier DMP use during the archery season.

	Percentage of:			
	All Hunters	Southern Zone Hunters	Bow Hunters	DMP Applicants
Oppose	16.1	14.8	5.4	15.1
Neutral	30.1	29.9	15.4	25.6
Support	53.8	55.4	79.2	59.3

**Table 7.** Reasons related to support for earlier DMP use during the archery season<sup>a</sup>.

Independent Variable	Semipartial Correlation
Special opportunities	0.496
Individual limits	-0.084
Harvest limits	-0.067
Funding	0.048

<sup>a</sup> Absolute value of semipartial correlation reflects strength of association. Sign indicates whether association with support is positive or negative.

**Table 8.** Percentage of hunters who would have participated in DMP consignment during last 2 years.

	Consign in last 2 years?
Definitely not	26.9
Possibly	20.6
Probably	19.1
Definitely	28.3
Don't Know	5.0

**Table 9.** Support for DMP consignment.

	Percentage of:	
	All Hunters	DMP Applicants
Oppose	27.6	24.5
Neutral	16.8	15.4
Support	55.6	60.0

Factors that were positively correlated with support for DMP consignment were: "hunting opportunity" and, to a lesser degree, "landowners," "special opportunities," and "management capability" (Table 10). A concern about "individual limits" was most strongly negatively correlated with support for this regulation. "Harvest limits" also was negatively correlated.

The positive relationship between support and "hunting opportunity" indicates that the main advantage hunters see in DMP consignment is providing them with additional opportunities to hunt and harvest deer. Some hunters also believe increasing DEC's management capability would be an advantage. The concern about "individual limits" suggests that some hunters fear that consignment could allow fewer individuals to take a higher proportion of the deer harvest. The relationship with "harvest limits" shows that increasing the total deer harvest also concerns some hunters.

Although a majority supports this proposal, significant opposition also exists. A potential for some disagreement exists if DEC adopts DMP consignment.

### **Either Sex Southern Zone Muzzleloader Season**

About half of all hunters and Southern Zone hunters support legalizing the harvest of any deer during the Southern Zone muzzleloader season (Table 11). Among muzzleloader hunters, about three-quarters support this regulation. Approximately 1 in 5 oppose this change – around 1 in 10 among muzzleloader hunters.

An interest in "special opportunities" was most strongly correlated with support for this regulation (Table 12). Hunters also were more likely to support this change if they were concerned about "hunting opportunity," "participation," "management capability," or "landowners." They were more likely to oppose this regulation if they thought "individual limits" and "harvest limits" were important.

The strong positive correlation between support and "special opportunities" suggests that the primary value in changing the muzzleloader season to either sex, from the perspective of hunters, would be to increase hunting opportunities for muzzleloader hunters. The correlations with "participation" and "management capability" indicate that hunters believe this regulation could increase hunting participation and DEC's management capability. The relationship between opposition to this change and "individual limits" and "harvest limits" show that some hunters are concerned that this regulation could concentrate the deer harvest in the hands of fewer individuals and increasing the total deer harvest.

This regulatory change enjoys strong support among those most affected, but the opposition to it is not negligible.

### **Opening Day Timing**

About half of all deer hunters support keeping the current system for setting opening day (Table 13). The majority of the rest prefer to have opening day always fall the Monday before Thanksgiving week, but nearly 1 in 5 would like it always to fall the Monday of Thanksgiving week. These figures are comparable to those Enck and Decker (1995) found in a study of 1993

**Table 10.** Reasons related to support for DMP consignment<sup>a</sup>.

Independent Variable	Semipartial Correlation
Individual limits	-0.211
Hunting opportunity	0.169
Landowners	0.092
Harvest limits	-0.090
Special opportunities	0.072
Management capability	0.061

<sup>a</sup> Absolute value of semipartial correlation reflects strength of association. Sign indicates whether association with support is positive or negative.

**Table 11.** Support for making Southern Zone muzzleloader season either sex.

	Percentage of:		
	All Hunters	Southern Zone Hunters	Muzzleloader Hunters
Oppose	20.5	19.6	10.7
Neutral	29.6	31.7	14.3
Support	49.8	48.7	75.0

**Table 12.** Reasons related to support for making Southern Zone muzzleloader season either sex<sup>a</sup>.

Independent Variable	Semipartial Correlation
Special opportunities	0.247
Individual limits	-0.108
Hunting opportunity	0.104
Harvest limits	-0.092
Participation	0.080
Management capability	0.050
Landowners	0.038

<sup>a</sup> Absolute value of semipartial correlation reflects strength of association. Sign indicates whether association with support is positive or negative.

**Table 13.** Support for different options for setting opening day.

Timing of Opening Day	Percentage of Hunters Supporting
Keep current system	47.5
Monday of week before Thanksgiving	28.0
Monday of Thanksgiving week	18.2
Don't Know	6.4

deer hunters, although support for having opening day always fall on the Monday of Thanksgiving week was higher in 1993.

Concern about "hunting opportunities" was positively correlated with interest in having opening day fall the Monday before Thanksgiving week and negatively correlated with support for the current system (Table 14). Those interested in "individual limits" were more likely to prefer the current system and less likely to want opening day to fall the Monday before Thanksgiving week. A concern about "crowding" was negatively correlated with support for the current system.

The correlation between "individual limits" and support for opening day alternatives suggests that hunters who support the current system think it is more equitable than having opening day always fall the week before Thanksgiving. If opening day fell the week before Thanksgiving, fewer hunters might be able to take time off from work to participate and the opportunity to harvest deer would be less fairly distributed. The negative relationship between "crowding" and support for the current system, however, indicates that hunters think that crowding is more likely with the current system – a system which allows more hunters to participate on opening day will lead to greater crowding. The interest in an earlier opening day among those who are concerned about "hunting opportunities" suggests that they believe that opening gun season the week before Thanksgiving will give them more opportunities to hunt and take deer – likely because an earlier season start allows hunters a greater chance to hunt during the rut.

### **Crossbows**

Most hunters (54%) definitely would not have hunted with crossbows had they been legal during the last two years, but 20% probably or definitely would have (Table 15). Opinions were mixed about legalization (Table 16). Nearly half of all hunters preferred not to legalize crossbows, and nearly half supported one or more forms of legalization. Among those who wanted legalization, allowing use of crossbows during the archery season was most popular and legalizing them during the regular season was least popular. The pattern of support among bow hunters for legalizing crossbows was similar to that among all deer hunters.

The main contrast between supporters and opponents of legalization was that supporters were more concerned about "hunting opportunities" and "special opportunities" (Table 17). Opponents were more concerned about "individual limits."

The relationships between "hunting opportunities" and "special opportunities" and support for legalizing crossbows demonstrate that hunters think legalization would give them more opportunities to hunt and harvest deer and more special harvest opportunities. The correlation of "individual limits" with opposition to crossbows shows that hunters think allowing the use of crossbows could result in the concentration of the deer harvest in the hands of fewer individuals. This proposal is one of the most controversial ones we presented to hunters. Support for and opposition to legalization are about evenly split. Substantial opposition would be possible if crossbows were legalized without further communication efforts aimed at hunters.

**Table 14.** Reasons related to support for different options for setting opening day<sup>a</sup>.

Concern about:	Preferred Timing of Opening Day		
	Current System	Monday before Thanksgiving Week	Monday of Thanksgiving Week
Hunting opportunities	-	+	
Crowding	-		
Management capability			+
Individual limits	+	-	
Revenue	+		

<sup>a</sup>Signs indicate whether reasons were positively or negatively correlated with support for each option. Blanks indicate no significant correlation with that option.

**Table 15.** Percentage of hunters who would have hunted with crossbows, if legal, during last 2 years.

	Hunt with crossbows in last 2 years?
Definitely not	54.0
Possibly	17.2
Probably	8.1
Definitely	12.5
Don't Know	8.2



**Table 16.** Support for different options for legalizing crossbows.

Regulatory Option	Percentage of:	
	All Hunters	Bow Hunters
Legalize during archery seasons	27.6	26.5
Legalize during regular season	9.3	11.8
Legalize during new special season	18.4	22.6
Do not legalize	45.4	46.3
Don't Know	9.0	5.0

**Table 17.** Reasons related to support for different options for setting opening day<sup>a</sup>.

	Preferred Option for Legalizing Crossbows			
	Archery Seasons	Regular Season	New Special Season	Do Not Legalize
Interest in:				
Personal opportunities to hunt and take deer	+		+	-
Ethical behavior				+
Increasing hunting participation	+			-
Increasing special opportunities	+	+	+	-
Improving herd health	-			
Limiting individual harvest	-	-	-	+
Landowner harvest opportunities				-

<sup>a</sup>Signs indicate whether reasons were positively or negatively correlated with support for each option. Blanks indicate no significant correlation with that option.

### **Optical Sights on Muzzleloaders**

Only about 30% of hunters definitely or probably would have used optical sights on muzzleloaders had they been legal during the past two years (Table 18). About 40% definitely would not have.

Approximately 40% support legalizing optical sights for muzzleloaders, but nearly 30% oppose it (Table 19). About 30% would be neutral. The opposition to optical sights is about the same among muzzleloader hunters as among all hunters. Support for optical sights, however, is much higher among muzzleloader hunters, with nearly 60% supporting their legalization. Therefore, supporters outnumber opponents among muzzleloader hunters by about 2 to 1.

Support for legalizing optical sights was most likely among those interested in "special opportunities," "hunting opportunity," "participation," and "ethics" (Table 20). Opposition to optical sights was greatest among those concerned about "individual limits" and "crowding."

The correlations between support and "special opportunity" and "hunting opportunity" reflects that those who support legalization think it would increase both special opportunities and their personal opportunities to hunt and harvest deer. The interest in "ethics" among supporters (which measures, among other things, a concern about hunting safety and humane kills) may indicate that hunters think the use of optical sights could improve accuracy and thereby promote safety and cleaner kills. The relationship of "participation" with support suggests this regulation could maintain or enhance hunting participation. In fact, a typical argument for legalizing optical sights is that it would allow older hunters with deteriorating eyesight to participate in the muzzleloader season. We found, however, that older hunters were not more likely to say that they would have used optical sights on muzzleloaders if they had been legal (Table 18).

The relationship between opposition and "individual limits" and "crowding" suggests that hunters think that disadvantages of legalizing optical sights could include increased crowding during the muzzleloader seasons (because more individuals would be able to participate) and the creation of opportunities that could allow fewer individuals to take more than their fair share of deer. Given that muzzleloader season was originally created as a primitive weapon season, some hunters prefer to keep optical sights illegal and limit participation in the season to those interested in using primitive weapons.

Although significant opposition exists to legalizing optical sights, a strong majority either supports legalization or are neutral. Particularly strong support exists among muzzleloader hunters.

### **Timing of Late Special Seasons**

Hunters were divided about the optimal timing and length of the late bow and muzzleloader seasons (Table 21). A plurality (almost one-third of hunters) wanted to keep the current system, but more than half wanted some type of change. Among those wanting change, a plurality wanted both to separate and extend the late seasons. The smallest percentage wanted only to separate the seasons. The preferences of Southern Zone hunters were similar to those of all hunters.

**Table 18.** Percentage of hunters (by age) who would have used an optical sight on a muzzleloader during last 2 years.

	Used optical sight in last 2 years?						All Hunters
	Age						
	25 and under	26-35	36-45	46-55	56-65	66 and older	
Definitely not	26.3	37.4	39.4	39.5	43.4	36.8	38.4
Possibly	13.2	14.3	17.0	14.2	12.1	12.9	14.3
Probably	13.2	10.3	11.8	10.7	9.0	11.6	11.1
Definitely	23.4	19.4	15.9	19.7	19.8	12.3	18.0
Don't Know	23.9	18.6	15.9	15.9	15.7	26.5	18.3

**Table 19.** Support for optical sights on muzzleloaders.

	Percentage of:	
	All Hunters	Muzzleloader Hunters
Oppose	28.5	29.5
Neutral	31.9	13.0
Support	39.6	57.5

**Table 20.** Reasons related to support for optical sights on muzzleloaders<sup>a</sup>.

Independent Variable	Semipartial Correlation
Special opportunities	0.129
Individual limits	-0.096
Hunting opportunity	0.079
Participation	0.061
Ethics	0.042
Crowding	-0.038

<sup>a</sup> Absolute value of semipartial correlation reflects strength of association. Sign indicates whether association with support is positive or negative.

**Table 21.** Support for different options for timing of special late seasons.

	Percentage of:			
	All Hunters	Southern Zone Hunters	Bow Hunters	Muzzleloader Hunters
Keep current system	32.0	32.4	23.8	22.1
Extend, but do not separate	18.1	20.4	26.6	31.0
Separate, but do not extend	12.7	11.5	9.4	7.9
Separate and extend	25.5	24.5	36.9	31.3
Don't Know	11.7	11.1	3.3	7.6

Among bow and muzzleloader hunters, stronger support existed for some type of change, with separating and extending the seasons still the most popular option. Indeed, more supported separating and extending the seasons than keeping the current system. Separating the seasons only was still the least popular option.

A concern about "hunting opportunities" was correlated with higher support for extending and separating the seasons and with lower support for the current system and only separating the seasons (Table 22). An interest in "crowding" was related to higher support for the options that involved separating the seasons and lower support for the options which did not. Those interested in "special opportunities" were more likely to support one of the options that involved extending the seasons and less likely to support the other options. Hunters concerned about "individual limits" were less likely to support options which involved extending the seasons and more likely to support the other options.

The interest in "hunting opportunities" and "special opportunities" among those who support extending the seasons shows that these hunters believe extending the seasons for hunters would increase the opportunities for them to hunt and take deer and increase special harvest opportunities. The correlation of "crowding" with support for separating the season suggests that reducing crowding would be the primary benefit to hunters of these options. The relationship between "individual limits" and opposition to extending the seasons reflects that some hunters are concerned that extending the seasons could concentrate the deer harvest into fewer hunters hands.

Most hunters support some type of change in the late special seasons, and this support is particularly strong among those who participate in these seasons. Options which include extending the late season are the most popular. Significant support also exists for the current system, however.

### **Summary of Reasons for Supporting Regulations**

Hunters use a wide range of criteria to judge regulations. Most believed that 15 out of the 23 reasons we presented to them were important considerations. The most frequently cited reasons were community-oriented concerns – concerns for deer, safety, landowners, etc. Although self-interest – concern about personal hunting opportunities and deer take – also were important, they were less frequently cited.

The most frequently cited considerations were not the best predictors of support for specific regulations, however. If almost all hunters think a given concern is important, that concern can not explain why some hunters support a regulation but others do not. Although other factors were important, the concerns that most frequently explained support for specific regulations were based in self-interest – increasing personal opportunities to hunt and take deer, particularly among those interested in bow and muzzleloader hunting. Many of the proposed changes were perceived to enhance hunting opportunities and were, therefore, supported by many hunters. The most common reason for opposing regulations was a concern about fairness – some hunters were concerned that providing additional hunting opportunities could also concentrate the harvest in the hands of fewer hunters. Similar factors have been found to

**Table 22.** Reasons related to support for different options for setting opening day<sup>a</sup>.

Interest in:	Preferred Option for Timing Late Seasons			
	Current System	Extend, Don't Separate	Separate, Don't Extend	Extend and Separate
Personal opportunities to hunt and take deer	-		-	+
Reducing crowding	-	-	+	+
Limiting total harvest		-	+	
Increasing hunting participation		+		
Increasing special opportunities	-	+	-	+
Limiting individual harvest	+	-	+	-

<sup>a</sup>Signs indicate whether reasons were positively or negatively correlated with support for each option. Blanks indicate no significant correlation with that option.

influence attitudes toward regulations in past studies (Enck and Decker, 1995; Hansen et al., 1995)

Choosing regulations, therefore, appeared to involve balancing the value of additional hunting opportunities with the value of an equitable distribution of harvest. Whether this finding is true of how hunters evaluate regulations in general or just of how they evaluated this set of regulations is difficult to say. One of BOW's current concerns is increasing their deer management capability to help reduce overabundant deer populations. Regulatory changes BOW proposes will often involve providing hunters with increased opportunities to harvest deer. These changes, therefore, may be particularly likely to involve a trade-off between maximizing harvest and distributing harvest equitably.

### **Effects of Information**

Hunters who received information about the pros and cons of DMP consignment were slightly but significantly less likely to support this regulation (Table 23). A qualitative assessment of support is similar, however, for those who received information and those who did not.

Respondents who received information about reasons for changing or not changing the timing of opening day gave responses that were significantly and substantially different from those who did not (Table 24). Hunters receiving information were more likely to favor keeping the current system and less likely to want opening day to fall always on the Monday of the week before Thanksgiving.

These differences are striking. Support for keeping the current system increased from 40% to 53%, while support for having opening day fall the week before Thanksgiving dropped from about one-third to less than one-quarter. Faced with these data sets, managers could reach different conclusions. Among hunters who received no information, about half wanted a change in the current system and fewer than half did not. Among hunters who received information, more than half wanted to keep the current system.

These findings suggest caution in interpreting mail survey data about support for regulatory changes. Our findings are consistent with numerous past studies that show that opinions expressed on surveys can be influenced even when a small amount of information is included (Reiling et al., 1988; Lauber and Knuth, 2000; McComas and Scherer, 1999; Bright and Manfredo, 1997; Fishkin, 1995). Indeed, other researchers have criticized surveys as tools for making public policy decisions because opinions expressed on them can be unstable and respondents lack the opportunity for interaction and deliberation that can refine perspectives (Heberlein, 1976; Milbraith, 1981; Lauber and Knuth, 1998). Lauber and Knuth (1998) argued that citizen participation efforts that allowed the opportunity for deliberation were superior because individuals were able to hear and consider other opinions before making judgements about whether they supported particular options. They believed policy choices could be wiser if such interchange preceded collecting input.

We attempted to mimic this type of deliberative interchange in a small way for two regulations being evaluated in this survey. Given that substantial differences existed in the

**Table 23.** Effect of information on percentage of hunters supporting DMP consignment.

	Received Information?	
	No	Yes
Oppose	26.4	28.7
Neutral	15.7	17.9
Support	57.9	53.4

**Table 24.** Effect of information on percentage of hunter supporting various options for setting opening day.

Regulatory Option	Received Information?	
	No	Yes
Keep current system	41.5	53.4
Monday of week before Thanksgiving	32.8	23.1
Monday of Thanksgiving week	17.5	18.8
Don't Know	8.2	4.6



support respondents expressed for one regulation depending on whether they received information, we are faced with the question of whether this was a better way to collect hunters' opinions. Although we tried to provide representative arguments for and against these regulations based on the data we had collected from hunters during interviews, we can not guarantee:

- these adequately addressed all the important arguments on both sides of the issue in a balanced way;
- these arguments were read and understood by hunters; and
- these arguments had the same type of impact as would occur from participating in a deliberative forum.

As we recommend below, it would be valuable to compare the data collected through a survey, including the pros and cons of different management regulations, with the data which could be collected through some type of deliberative body.

## CONCLUSIONS

### Management Recommendations

Two of the proposed regulatory changes – setting opening day relative to Thanksgiving and legalizing crossbows – may be difficult to justify because opponents outnumbered supporters. Hunters supported the other proposed changes, however, including:

- continuing to allow Sunday hunting in western New York;
- expanding the number of days on which Southern Zone bow hunters could use DMPs during the early archery season;
- allowing hunters to transfer or consign unused DMPs to other hunters;
- allowing deer of either sex to be taken during the Southern Zone muzzleloader season;
- allowing muzzleloader hunters to use telescopic scopes (optical sights) during muzzleloader season; and
- extending the late archery and muzzleloader seasons and possibly separating them, too.

Some opposition to these proposals existed, but the existing support may be enough to justify these changes if BOW wants to make them.

This study showed communication could have a marked effect on opinions. We recommend, therefore, that BOW consider what information it wants hunters to have before assessing their opinions. In this survey, we communicated the pros and cons of regulatory changes from the perspective of hunters. We reasoned that hunters would likely hear this type of argument if these proposed changes took effect. Therefore, these arguments could influence hunters' opinions in actuality and distributing that information to them could lead to a better assessment of their opinions.

The reasons we identified that influence hunters' attitudes about regulations can serve as the basis of BOW communication. Understanding the importance of these factors to hunters can help BOW tailor their communication to hunters' concerns. Distributing this information can help ensure that hunters will have factual information about the likelihood of consequences that are important to them.

In addition, BOW may want hunters to have other types of information. Hunters' perspectives on the pros and cons of deer hunting regulations could be incomplete or based on misunderstandings. Basing key messages only on hunters' concerns, therefore, could still lead to poorly informed opinions. BOW may choose, therefore, to communicate information about the pros and cons from an agency perspective when evaluating regulatory changes.

Understanding the factors that influence hunters' perspectives on regulations can help BOW to communicate to hunters about what is important to them, but it can also help BOW to design the types of regulations hunters will find appealing. Considering how new regulations could address hunters' concerns can lead to greater hunter acceptance before they are even proposed.

## **Research Recommendations**

The most intriguing research questions suggested by this study are concerned with how information influences hunters' opinions. Knowing that information can change opinions raises the question of what and how much information hunters should have before their opinions are assessed. Ideally, hunters opinions should be:

- thoughtful and based on accurate information so that they can help BOW make a wise decision; and
- good indicators of likely support or opposition if BOW decides to implement a proposed regulation.

We have argued that some type of communication is called for before assessing opinions. Many possibilities exist for how to distribute information, however:

- Information could be distributed as part of a survey, as in this study.
- A broad communication plan could target all hunters before assessing their opinions on an important topic.
- Feedback on regulations could be collected through task forces or focus groups rather than surveys.
- BOW could maintain it's present system for gathering feedback from hunters.

Research to assess the different outcomes from each of these options would be valuable, including:

- how they effect opinions;
- how well they predict future support for or opposition to regulations;
- how much they cost; and
- other factors.

Such data could help BOW improve its strategies for collecting data from hunters.

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## **APPENDIX A**

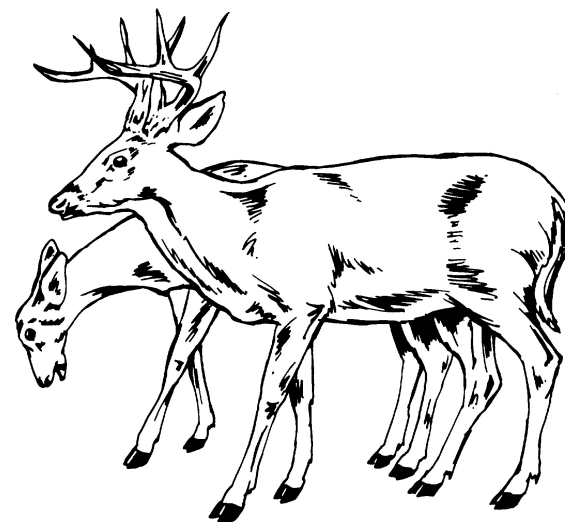
### **Mail Survey Instrument**

**DEER HUNTING**

**IN**

**NEW YORK:**

**A SURVEY OF HUNTERS**



Human Dimensions Research Unit  
Department of Natural Resources  
College of Agriculture and Life Sciences  
Cornell University, Ithaca, NY 14853

# DEER HUNTING IN NEW YORK:

## A SURVEY OF HUNTERS

Research conducted by the  
Human Dimensions Research Unit  
in the  
Department of Natural Resources  
College of Agriculture and Life Sciences  
Cornell University

Sponsored by the  
Bureau of Wildlife  
in the  
New York State Department of Environmental Conservation

Your answers to this questionnaire will help the New York State Department of Environmental Conservation make decisions about deer management. Please complete this questionnaire at your earliest convenience, seal it, and drop it in any mailbox (no envelope needed); return postage has been provided. **Your responses will remain confidential and will never be associated with your name.**

**THANK YOU FOR YOUR ASSISTANCE!**

### *General Information*

1. In approximately what year did you first hunt deer in New York or elsewhere?  
19 \_\_\_\_\_
2. In approximately how many different years have you hunted deer in New York or other places?  
\_\_\_\_\_ Years
3. Approximately how many deer have you bagged in New York or other places since you started deer hunting?  
\_\_\_\_\_ Deer

### *Participation in 1997 and 1998 New York Deer Hunting Seasons*

4. Did you purchase a license that allowed you to hunt for deer in New York State during the 1998 deer hunting season? (*Check one.*)  
\_\_\_\_\_ No  
\_\_\_\_\_ Yes
5. Did you hunt for deer in New York State during the 1997 or 1998 deer hunting seasons?

<u>Year</u>	<u>No</u>	<u>Yes</u>
1997	<input type="checkbox"/>	<input type="checkbox"/>
1998	<input type="checkbox"/>	<input type="checkbox"/>

If you answered "No" for both years, skip to Question 10.

6. In which New York counties did you hunt deer during the 1997 and 1998 deer hunting seasons? (If you do not know the county name, write in a city or village near where you hunted. If you did not hunt deer during the season, write in "none.")

List all NY counties hunted in

1997 \_\_\_\_\_  
1998 \_\_\_\_\_

7. How much of your deer hunting in New York did you do on each of the following types of land during the 1997 and 1998 deer hunting seasons? (Circle one number for each item.)

		<u>None</u>	<u>Some</u>	<u>Most</u>	<u>All</u>	<u>Don't Know</u>
a.	Land that I own.	0	1	2	3	5
b.	Private land that I do <u>not</u> own.	0	1	2	3	5
c.	Public land.	0	1	2	3	5

8. During which of the following seasons did you hunt for deer in New York in 1997 or 1998? (Check all that apply.)

<u>Season</u>	<u>1997</u>	<u>1998</u>
Bow	<input type="checkbox"/>	<input type="checkbox"/>
Muzzleloader	<input type="checkbox"/>	<input type="checkbox"/>
Gun	<input type="checkbox"/>	<input type="checkbox"/>

- 9a. How many antlered deer and antlerless deer did you bag during each of the following 1997 New York deer hunting seasons? (Circle "NA" if you did not hunt during that season.)

<u>Season</u>	<u>Number of deer bagged in 1997</u>		
	<u>Antlered Deer</u>	<u>Antlerless Deer</u>	
Bow	_____	_____	NA
Muzzleloader	_____	_____	NA
Gun	_____	_____	NA

- 9b. How many antlered deer and antlerless deer did you bag during each of the following 1998 New York deer hunting seasons? (Circle "NA" if you did not hunt during that season.)

<u>Season</u>	<u>Number of deer bagged in 1998</u>		
	<u>Antlered Deer</u>	<u>Antlerless Deer</u>	
Bow	_____	_____	NA
Muzzleloader	_____	_____	NA
Gun	_____	_____	NA

### Use of Deer Management Permits

10. How many deer management permits (DMP's) did you apply for, receive, and fill in 1997 and 1998? (If none, write "0.")

<u>DMP's</u>	<u>1997</u>	<u>1998</u>
Applied for	_____	_____
Received	_____	_____
Filled	_____	_____

If you did not apply for any deer management permits in either 1997 or 1998, skip to Question 13.

- 11a. Why did you apply for a deer management permit in 1997 and/or 1998? (Check all that apply.)

- \_\_\_\_\_ To increase my chances of taking at least one deer.  
 \_\_\_\_\_ To be able to take an additional deer after filling my buck tag.  
 \_\_\_\_\_ To allow me to hunt legally with friends and family after filling my buck tag.  
 \_\_\_\_\_ To help manage the size of the deer herd.  
 \_\_\_\_\_ To keep someone else from taking a doe.  
 \_\_\_\_\_ Other (please specify): \_\_\_\_\_

- 11b. Please circle the one response you checked in question 11a that was your most important reason for applying for a deer management permit?



12. How serious were you about shooting a deer using the deer management permit(s) you applied for? (Check one.)
- \_\_\_\_\_ No intention of shooting a deer using the permit.
- \_\_\_\_\_ Not too serious about shooting a deer using the permit.
- \_\_\_\_\_ Moderately serious about shooting a deer using the permit.
- \_\_\_\_\_ Very serious about shooting a deer using the permit.

Skip to Question 14.

- 13a. If you did not apply for a deer management permit in 1997 or 1998, why not? (Check all that apply.)

I wanted to apply, but:

- \_\_\_\_\_ I did not get around to it.
- \_\_\_\_\_ I did not think I would have enough time to hunt.
- \_\_\_\_\_ I did not think my chances of getting a permit were good.
- \_\_\_\_\_ the permit application period was too short.
- \_\_\_\_\_ other (please specify reason): \_\_\_\_\_

I did not want to apply, because:

- \_\_\_\_\_ I was concerned about too many does being shot in my hunting area.
- \_\_\_\_\_ I did not need or want an extra deer.
- \_\_\_\_\_ other (please specify reason): \_\_\_\_\_

- 13b. Please circle the one reason you checked in question 13a that was your most important reason for not applying for a deer management permit in 1997 or 1998?

## Your Opinions about Potential Changes in Deer Hunting Regulations

Each year, DEC deer managers, sportsmen's groups, landowners, and other individuals propose changes in regulations dealing with deer hunting. The merits of each proposal must be weighed carefully. Your responses in this section will help deer managers understand your opinions about different regulations and how they would affect your participation.

14. Currently, Sunday hunting is legal in all of New York State. However, Sunday hunting was not legal in western New York until recently.

- a. Did you hunt on Sunday in New York State during either the 1997 or 1998 deer hunting seasons?

<u>Year</u>	<u>No</u>	<u>Yes</u>
1997	<input type="checkbox"/>	<input type="checkbox"/>
1998	<input type="checkbox"/>	<input type="checkbox"/>

- b. Do you support or oppose the continued opportunity for western New York deer hunters to hunt on Sundays? (Please circle the appropriate number below.)

Strongly Oppose				Neutral				Strongly Support
-4	-3	-2	-1	0	1	2	3	4

15. Currently, DMP's may be used to take antlerless deer during the last 10 days of the Southern Zone early archery season or during the regular or special late seasons. A proposed regulation would allow DMP's to be used beginning on November 1 each year, which would give bow hunters more days during which they could hunt with DMP's.

Would you support or oppose this proposal? (Please circle the appropriate number below.)

Strongly Oppose				Neutral				Strongly Support
-4	-3	-2	-1	0	1	2	3	4

16. Currently, deer management permits (DMP's) are not transferable. Only the person to whom a DMP is issued may use it to take an antlerless deer. A proposed change would allow a DMP holder to let another hunter use his or her DMP. In other words, a permit holder could let another hunter have an unused DMP to take an antlerless deer.

a. If it had been legal for hunters to let other hunters use their DMP's, would you have EITHER let another hunter use your DMP OR used another hunter's DMP during either of the last two years?

\_\_\_\_\_ Definitely not  
 \_\_\_\_\_ Possibly  
 \_\_\_\_\_ Probably  
 \_\_\_\_\_ Definitely

\_\_\_\_\_ Don't Know

b. Would you support or oppose this proposal? (Please circle the appropriate number below.)

Strongly Oppose				Neutral				Strongly Support
-4	-3	-2	-1	0	1	2	3	4

17. Currently, only antlered deer may be taken during the Southern Zone muzzleloader season, unless a hunter is filling a deer management permit. A proposed change would allow a deer of either sex to be taken during the Southern Zone muzzleloader season.

Would you support or oppose this proposal? (Please circle the appropriate number below.)

Strongly Oppose				Neutral				Strongly Support
-4	-3	-2	-1	0	1	2	3	4

18. Currently, the opening day of the regular deer season is the first Monday after November 15. Sometimes opening day falls the week before Thanksgiving, and sometimes it falls the week of Thanksgiving. Some people have proposed that opening day be set in relation to Thanksgiving. One change would set opening day so that it always occurs the Monday of the week before Thanksgiving. Another change would set opening day so that it always occurs the Monday of Thanksgiving week.

Which of the following options do you think is best? (Check one.)

\_\_\_\_\_ Keep the current system in which opening day is on the first Monday after November 15.  
 \_\_\_\_\_ Always start the season the Monday of the week before Thanksgiving week.  
     \_\_\_\_\_ Always start the season the Monday of Thanksgiving week.  
 \_\_\_\_\_ Don't Know.

19. Currently, crossbows are not legal for deer hunting in New York State. A proposed change would legalize crossbows during one or more seasons.

a. If it had been legal, would you have hunted deer with a crossbow during either of the last two years?

- ☐ Definitely not  
☐ Possibly  
☐ Probably  
☐ Definitely  
  
☐ Don't Know

b. Which of the following options would you support? (Check all that apply.)

- ☐ Legalize crossbows during the archery seasons.  
☐ Legalize crossbows during the regular season.  
☐ Legalize crossbows during a new special season.  
☐ Do not legalize crossbows.  
  
☐ Don't Know

20. Currently, muzzleloader hunters are not allowed to use telescopic scopes (optical sights) during the muzzleloader season. A proposed change would allow telescopic scopes to be used on muzzleloaders.

a. If it had been legal, would you have hunted using a telescopic scope on a muzzleloader during either of the last two years?

- ☐ Definitely not  
☐ Possibly  
☐ Probably  
☐ Definitely  
  
☐ Don't Know

b. Would you support or oppose this proposal? (Please circle the appropriate number below.)

Strongly Oppose					Neutral					Strongly Support
-4	-3	-2	-1	0	1	2	3	4		

21. Currently, the Southern Zone late archery season takes place during the 5 days immediately following the close of the regular season, and the Southern Zone late muzzleloader season takes place during the 7 days immediately following the close of the regular season. One proposed change would extend both the late archery and muzzleloader seasons. Another proposal would separate the late archery and muzzleloader seasons so that bow hunters and muzzleloader hunters were not in the field at the same time.

Which of the following options would you support? (Check one.)

- ☐ Keep the current system.  
☐ Extend, but do not separate, the late archery and muzzleloader seasons.  
☐ Separate, but do not extend, the late archery and muzzleloader seasons.  
☐ Separate and extend, the late archery and muzzleloader seasons.  
  
☐ Don't Know

22. People have different reasons for supporting or opposing new hunting regulations. Please tell us how important to you each of the following reasons are for supporting or opposing new hunting regulations.

**When I consider proposed deer hunting regulatory changes, it is important to me that these changes:** (Please circle one number for each item.)

		Strongly Disagree	Neutral	Strongly Agree	Don't Know		
a.	Do <u>not</u> result in an increased total buck harvest.	1	2	3	4	5	6
b.	Do <u>not</u> result in an increased total doe harvest.	1	2	3	4	5	6
c.	<u>Increase</u> DEC's ability to control the size of the deer population.	1	2	3	4	5	6
d.	<u>Improve</u> the health of the deer population.	1	2	3	4	5	6
e.	<u>Increase</u> hunting opportunities for bow hunters.	1	2	3	4	5	6
f.	<u>Increase</u> hunting opportunities for muzzleloader hunters.	1	2	3	4	5	6
g.	<u>Increase</u> hunting opportunities for firearm hunters.	1	2	3	4	5	6
h.	Keep a strict limit on the number of deer that individual hunters can take.	1	2	3	4	5	6
i.	Increase opportunities for New York State <u>landowners</u> to harvest deer.	1	2	3	4	5	6
j.	Increase deer hunting opportunities for hunters who have trouble taking time off from work.	1	2	3	4	5	6
k.	Increase <u>my own</u> chances of taking bucks.	1	2	3	4	5	6
l.	Increase <u>my own</u> chances of taking large bucks.	1	2	3	4	5	6
m.	Increase <u>my own</u> chances of taking does.	1	2	3	4	5	6

		<u>Strongly Disagree</u>	<u>Neutral</u>	<u>Strongly Agree</u>	<u>Don't Know</u>		
n.	Allow me more opportunity to spend time in the field.	1	2	3	4	5	6
o.	Encourage new people to take up deer hunting.	1	2	3	4	5	6
p.	Increase the total number of deer hunters in New York.	1	2	3	4	5	6
q.	Lead to a better public image of hunters and hunting.	1	2	3	4	5	6
r.	Protect the interests of farmers and other landowners.	1	2	3	4	5	6
s.	Promote clean, humane kills.	1	2	3	4	5	6
t.	Make deer hunting a <u>safer</u> sport.	1	2	3	4	5	6
u.	<u>Reduce</u> crowding of hunters on particular days.	1	2	3	4	5	6
v.	<u>Reduce</u> crowding of hunters in particular areas.	1	2	3	4	5	6
w.	<u>Increase</u> revenue for DEC's deer management programs.	1	2	3	4	5	6

#### Your Deer Hunting Preferences

23. If you were allowed to take as many deer as you wanted using whatever implements you wanted . . .

- a. how many deer would you like to take each license year?

\_\_\_\_\_ Deer

- b. what is the minimum number of bucks you would like to take each license year?

\_\_\_\_\_ Bucks

24. If you were allowed to take as many deer as you wanted using whatever implements you wanted and you had the opportunity to donate meat you could not use to a worthy cause . . .

a. how many deer would you like to take each license year?

\_\_\_\_\_ Deer

b. what is the minimum number of bucks you would like to take each license year?

\_\_\_\_\_ Bucks

### Background Information

25. How much has each of the following factors contributed to your interest in hunting? (Circle one number for each item.)

		Effect on interest in hunting:				
		<u>None</u>	<u>Slight</u>	<u>Moderate</u>	<u>Strong</u>	<u>Don't Know</u>
a.	Growing up in a hunting family	0	1	2	3	5
b.	Being in the armed services or national guard	0	1	2	3	5
c.	Having friends who hunt	0	1	2	3	5

26. How much land do you own in New York State? (Enter "0" if you do not own any land. Enter "1" for anything 1 acre or less.)

\_\_\_\_\_ acres

27. How would you describe the type of area in which you live? (Check one.)

\_\_\_\_\_ rural, farm

\_\_\_\_\_ rural, nonfarm

\_\_\_\_\_ community with under 5,000 people

\_\_\_\_\_ community with 5,000 to 24,999 people

\_\_\_\_\_ city with 25,000 to 100,000 people

\_\_\_\_\_ city with over 100,000 people

Please use the space below for any additional comments you may wish to make.

**Thank You For Your Time and Effort!**

To return this questionnaire, simply seal it (postage has been provided) and drop it in the nearest mailbox.

